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RECOGNITION OF INDIVIDUAL DIFFERENCES IN THE JUNIOR HIGH SCHOOL

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Justification for the reorganization of the traditional school system on the 6-3-3 plan lies in part in the fact that the junior high school "realizes a democratic school system" through the "recognition of individual differences." A canvass of educational literature and the combined opinion of well qualified judges secured by Koos,¹ show that the "peculiar" function of recognizing individual differences ranks as the most important of the justifications for organizing the junior high school. His study shows that 130 judges place this function as first in importance among the peculiar functions. In an attempt to ascertain to what extent the means of achieving so important a function of the junior high school is being provided, the writer has conducted a questionnaire study which resulted in an analysis of the practices of eighty-six junior high schools in various parts of the United States.

SIZE OF SECTIONS IN JUNIOR HIGH SCHOOLS

Data relative to size of classes or sections in junior high schools which were secured are summarized in Table I.

TABLE I

	GRADE		
	VII	VIII	IX
Mean number of pupils per section	30	29	29
Median number of pupils per section	30	29	29
Minimum number of pupils per section	8	11	7
Maximum number of pupils per section	65	55	76
Standard deviation from median	10	12	12
Percentage of schools with sections exceeding 25 pupils	70	66.6	65
Percentage of schools with sections exceeding 30 pupils	50	50	45
Percentage of schools with sections exceeding 35 pupils	25	32	24

¹ Leonard V. Koos, "The Peculiar Functions of the Junior High School: Their Relative Importance," *School Review*, XXVIII (November, 1920), 673-81.

The question naturally arises whether individual differences can be properly recognized in classroom sections exceeding thirty-five pupils. As yet the maximum number of pupils for an efficient classroom section has not been scientifically determined. The North Central Association of Colleges and Secondary Schools at its twenty-sixth annual meeting (March, 1921) recommended twenty-five pupils for a maximum¹ for secondary schools of the traditional four-year type. The Bureau of Educational Research at Ohio State University has recommended that a research problem be conducted to ascertain "what size of class can be taught most efficiently in the junior high school."² The standard number, twenty-five, is also cited by Briggs, who gives data from 165 junior high schools of which many have classes with more than forty-four pupils per section.³ The data secured by the writer correspond approximately with those given by Briggs. When, however, 60 to 70 per cent of the junior high schools in this study exceed the standard set by the North Central Association and, furthermore, when 1,500 standard traditional high schools may be said to be maintaining this standard, the question may well be raised as to whether adequate opportunities are being provided for the recognition of individual differences.

OBJECTIVE METHODS EMPLOYED IN ASCERTAINING INDIVIDUAL DIFFERENCES

In the eighty-six schools on which this study is based the number of sections per grade ranges from one to eighteen. The distribution of schools according to the number of sections, A and B, in each grade is given in Table II.

Obviously, with the exception of those grades which are made up of one section, there exists opportunity to divide grades into sections according to the individual differences of pupils, thus

¹ *Proceedings of the Twenty-Sixth Annual Meeting of the North Central Association of Colleges and Secondary Schools*, Part I, p. 22.

² B. R. Buckingham, "Class Size in Junior High School," *Educational Research Bulletin*, I (January 4, 1922), 5.

³ Thomas H. Briggs, *The Junior High School*, p. 243. Boston: Houghton Mifflin Co., 1920.

securing working sections which are more homogeneous than sections selected at random. The important point here is whether the pupils who compose these different sections have been grouped by scientific methods. It was found, however, from the replies to the inquiry, "On what basis are grades divided into different sections?" that less than one-half of the schools use scientific methods.

In order that the replies to this question might be as specific as possible, the schools were asked which of the following criteria are used in dividing grades into sections: (1) mental tests, (2)

TABLE II

NUMBER OF SECTIONS	GRADE				
	VI	VII	VIII	IX	X
1.....	1	8	6	6	2
2.....	1	13	15	10	.....
3.....	.....	14	16	13	.....
4.....	.....	10	9	7	2
5.....	.....	6	6	6	.....
6.....	.....	4	4	3	.....
7.....	.....	4	6	3	.....
8.....	.....	2	2	3	.....
9.....	.....	5	4	.....	.....
10.....	.....	3	3	1	.....
11.....	.....	.....	1	2	.....
12.....	.....	3	.....	1	.....
13 and over.....	1	5	6	3	.....
Total.....	3	77	78	58	4

teachers' judgments, (3) standardized achievement tests in subject-matter, (4) random selection, (5) sex, (6) school marks earned in previous grade, (7) school marks earned in present grade, (8) chronological age. Analysis of the replies shows that 20 of the 86 schools base their classification on one of the above criteria, 24 schools on two of the criteria, 22 on three, 11 on four, and 9 on five or more of the criteria. While the combinations which might be made of the criteria are many, there seems to be a tendency toward types of grouping, as is apparent in Table III.

Further analysis of the data shows that 41 schools use no mental tests and 45 schools use mental tests; 59 schools use no educational tests and 27 schools use educational tests; 33 schools use no tests

and 53 schools use tests; 32 schools rely on one test; 21 schools use more than one test; 21 schools use but one mental test; 24 schools

TABLE III

Number of Schools	Mental Tests	Teachers' Judgments	Subject Tests	Random Selection	Sex	Previous Marks	Present Marks	Actual Age
I..	X	.....	.....	.....	.....	.....	.....	.....
5..	.....	X	.....	.....	.....	.....	.....	.....
2..	.....	.....	X	.....	.....	.....	.....	.....
II..	.....	.....	.....	X	.....	.....	.....	.....
I..	.....	.....	.....	.....	.....	X	.....	.....
7..	X	X	.....	.....	.....	.....	.....	.....
I..	.....	.....	.....	X	.....	X	.....	.....
5..	.....	X	.....	.....	.....	X	.....	.....
I..	.....	X	.....	X	.....	.....	.....	.....
2..	X	.....	X	.....	.....	.....	.....	.....
2..	.....	X	X	.....	.....	.....	.....	.....
I..	.....	.....	.....	.....	.....	X	.....	X
I..	.....	.....	.....	.....	X	X	.....	.....
2..	.....	X	.....	.....	.....	.....	X	.....
I..	X	.....	.....	.....	.....	X	.....	.....
I..	X	.....	.....	.....	.....	.....	.....	X
3..	X	.....	X	.....	.....	X	.....	.....
3..	.....	X	.....	.....	.....	X	X	.....
4..	X	X	.....	.....	.....	X	.....	.....
6..	X	X	X	.....	.....	.....	.....	.....
2..	.....	.....	.....	.....	X	X	X	.....
I..	.....	X	X	.....	.....	X	.....	.....
2..	X	X	.....	.....	.....	.....	X	.....
I..	.....	.....	.....	.....	X	.....	X	X
I..	X	X	X	.....	X	.....	.....	.....
2..	X	X	.....	.....	X	X	.....	.....
3..	X	X	.....	.....	.....	X	X	.....
I..	X	X	.....	X	X	.....	.....	.....
I..	.....	X	X	.....	.....	X	X	.....
2..	X	X	X	.....	.....	X	.....	.....
I..	X	X	X	X	.....	.....	.....	.....
I..	X	X	X	.....	.....	X	X	.....
2..	X	X	X	.....	X	X	X	.....
I..	.....	X	.....	.....	X	X	X	X
2..	X	X	X	.....	.....	X	X	X
2..	X	X	.....	.....	.....	X	X	X
I..	X	X	X	.....	.....	.....	X	X
Total*.. 86..	45	58	27	15	11	39	23	9

* The totals indicate the number of times each occurred in the replies.

use more than one mental test; 4 schools use but one educational test; 23 schools use more than one educational test; 1 school relies on mental tests alone; 2 schools rely on mental and educational

tests alone; 21 schools use both mental and educational tests; 9 schools use mental tests and one other criterion; and 4 schools use educational tests and one other criterion.

It is evident that eleven schools rely on random selection alone, while five schools rely on teachers' judgments alone as a basis for classification of pupils into sections. Teachers' judgments is listed fifty-eight times. In contrast with these are the criteria of mental and educational tests, which are used together or with other criteria by twenty-one of the eighty-six schools. Mental tests is listed forty-five times. At this time when scientific methods in education should be considered the rule rather than the exception, these data show that there is considerable opportunity in the junior high school for progress in scientific methods. These figures, however, constitute marked improvement over the facts secured by W. H. Hughes,¹ who, in a study of 221 high schools in the United States, found that only 8.9 per cent of these schools use psychological tests while only 37.9 per cent make an effort to classify pupils according to ability.

IMPORTANCE ATTACHED TO RESULTS OF ACHIEVEMENT TESTS

In answer to the inquiry, "What value in terms of per cent do the results of standard achievement tests have in making promotions?" only fourteen schools seemed to have the information sufficiently in hand to give a report. Of those reporting, two replied 25 per cent; one, 10 to 30 per cent; one, 50 per cent; one, 0 to 100 per cent; two, "about one-third"; six frankly answered "indefinite"; while one candidly put down "0." Whether any of the remaining thirteen schools reporting the use of achievement tests use them to any extent in determining promotion can only be surmised. It is not unlikely that some of these schools take them into consideration without assigning any definite value to them.

ADAPTATION OF WORK TO INDIVIDUAL DIFFERENCES

In answer to the question "In what manner if any is the subject-matter adapted to the different ability groups?" fifty-seven

¹ W. H. Hughes, "Provisions for Individual Differences in High School Organization and Administration," *Journal of Educational Research*, V (January, 1922), 62-72.

schools reported as indicated in Table IV. A detailed analysis of these data shows that B is never listed alone; A is listed alone six times, and C is listed alone once. Combinations of A and C, whole or in part, are listed twenty-six times. Combinations of A, B, and C, whole or in part, are listed thirteen times. Combinations of B with A are listed four times, and combinations of B and C, whole or in part, are listed seven times. C, whole or in part, is listed in all forty-seven times. From these statements it appears that junior high schools, while not making consistently scientific effort to classify pupils according to individual differences, make provision for individual differences. In fifty-seven replies, extra work—supposedly for superior pupils—is listed thirty-nine times. “Number of subjects taken up” and “number of pages

TABLE IV

	Number of Schools
A. Quality of work.....	49
B. Different rate of promotion.....	23
C. Amount of work done:	
1. Number of pages covered.....	27
2. Number of subjects taken up.....	26
3. Extra work in superior sections.....	39

covered” are listed twenty-six and twenty-seven times respectively. Finally, “quality of work”—supposedly for superior children—is listed forty-nine out of fifty-seven times. Granting, however, that all of this is true, the question arises whether the quality of work done is the result of systematic effort to secure better work from superior pupils or whether it is the natural result of their superiority; whether the number of subjects taken up is the result of the systematic crowding of superior pupils or whether it is the natural result of their ability to do regular work in less time.

In the main, this study has confirmed the statements often made by leaders of the junior high school movement who admit that *some* junior high schools have failed but who deny that all of these schools embody the scientific principles which characterize the better junior high schools. This may be seen from the following summary of findings:

1. Classes in the junior high schools studied tend to be large. There seems to be a tendency to crowd junior high school classes. Sixty-five to 70 per cent of the junior high schools studied exceed the standard of twenty-five pupils per section set by the North Central Association for four-year high schools; 45 to 50 per cent exceed thirty pupils per section; 24 to 32 per cent exceed thirty-five pupils per section. Proper recognition of individual differences seems impossible in such large sections.

2. Junior high schools are more progressive in the use of scientific methods for measuring individual differences than are traditional 8-4 schools; nevertheless there is much room for improvement since 12.5 per cent of the junior high schools studied are depending on random selection alone and 20 per cent are depending on random selection or teachers' judgments alone for the classification of pupils according to individual differences. One-third of the schools studied use standardized educational tests, and one-half use standardized mental tests. However, inquiry discloses that months afterward some of the tests were either unscored or untabulated. One may well question whether many junior high schools are going about the task of fulfilling the peculiar functions of recognizing individual differences in anything like the scientific way in which it should be and can be done in the present stage of development of tests.

3. Little value seems to be assigned to the results of standardized tests in making promotions. Only fourteen schools out of eighty-six reported on this point, and for those the answers were vague and meager.

4. Answers to the question on adaptation of subject-matter to different ability groups seem gratifying, but the question arises whether or not these adaptations are due to natural ability of superior pupils rather than to design on the part of the administration to secure work commensurate with ability.

Generally speaking, considerable progress is apparent, but much must still be done to provide adequately for the recognition of individual differences in junior high schools.